

## Paul Christman . . .

would have graduated from Missouri this spring, and that never-before published story can tell you a lot about the character of Missouri's premier all-American and the affection he felt for his University.

You see, what with the War and marriage and a job, Paul got away from Columbia five hours short of a degree. It obviously didn't keep him from becoming highly successful, but he was never happy about it. So on one of his trips to the campus a year or so ago, he asked whether there was some way he could earn those final five hours. There was, and an independent study program was arranged. Paul was working on the last 2½-hour course this semester.

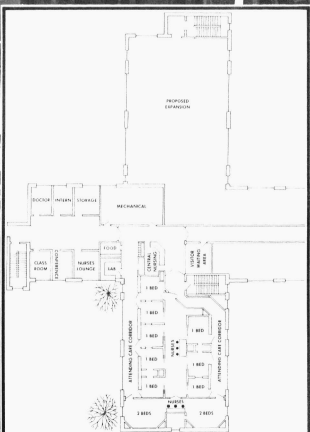
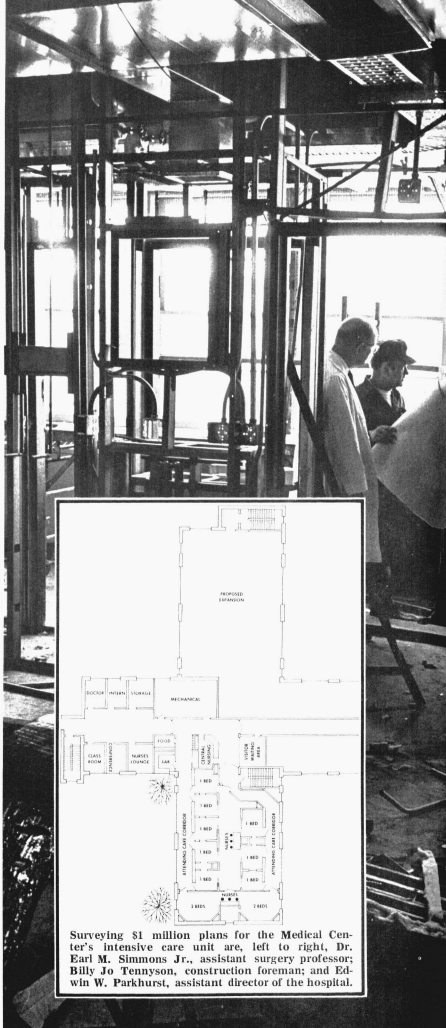
Paul Christman, of course, was a Missouri legend long before he died on March 2. To thousands of Tiger fans who never saw him play, he symbolized football greatness at Missouri, and there hadn't been much of that before he arrived. To those hundreds of alumni around the country and friends around the campus who knew him well — who knew how freely he had given of his time and energies over the years for Ol' Mizzou — he simply symbolized greatness. —S.S.

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Surveying \$1 million plans for the Medical Center's intensive care unit are, left to right, Dr. Earl M. Simmons Jr., assistant surgery professor; Billy Jo Tennyson, construction foreman; and Edwin W. Parkhurst, assistant director of the hospital.



**New  
Flexibility  
for  
Intensive  
Care**

**By Edwin W. Parkhurst**

"At that time, life hangs in the balance," Dr. Richard Martin, a cardiac specialist at the Medical Center, said, in commenting on the critical need for intensive health care in the first few days after a heart attack. In large part it is the need for intensive care in those important days that has prompted the Medical Center to begin construction of a \$1-million Intensive Care Unit (ICU).

Employing the most sophisticated techniques for the care of the critically ill, the Medical Center expects to complete the first phase of the ICU in time to admit cerebral-vascular (stroke) and cardio-vascular (coronary) patients by this summer. The first section of the unit will cost about \$480,000 and will provide for the care of 12 patients. An additional \$520,000 would complete the entire unit, bringing the intensive care patient capacity to approximately 25.

The prime concept behind the unit development means that when total construction of the ICU is completed a variety of critically ill patients may be cared for. Each of the beds of the unit will have a built-in flexibility allowing for specific care concentration based on the particular needs of the patient — whether he be a surgical, thoracic, medicine, stroke, coronary, or neurological case.

Replacing two of the Medical Center's present intensive care facilities, Phase I of the new ICU reflects a nationwide trend in hospital care for the critically ill. By concentrating medical specialists and equipment in limited areas designed specifically for intensive treatment, such units provide optimum patient care at the same time they effect economies in the hospital's total operation.

When the first section of the new unit opens in the fall, it will be a model system for intensive care. Much of the equipment has been developed specially for use by the Medical Center. Every electronic device will be built into unit walls.

A "primary care" corridor runs through the center of the unit while a second corridor circles the rooms. This provides a traffic separation avoiding conflicts between the various persons attending to patient needs. Patient supplies, resuscitation team input, laboratory specimen collection, and visitor traffic move on the outer ring while physicians and nurses arrive at a patient's bedside by using the central "primary care" corridor.

A four-way, audio-visual alarm system will automatically notify the medical personnel on duty of any critical change in a patient's

**The unit will be  
much more than a showplace.  
AMA statistics  
show that in many intensive care units  
mortality rates have been  
reduced by up to 60 percent.**

condition. The alarm will sound; a light outside the patient's room will flash; an "elapsed-time clock" will be activated to indicate at a glance how much time has passed since the patient experienced a critical condition change, and a trace of all patient measurements just prior to the alarm will be "frozen" on a memory system for quick referral in diagnosing the exact nature of the patient's condition.

A combination of three special lighting systems will provide the optimum range of illumination from recessed normal room lighting to variable high-intensity "wide-angle" lighting to an intense beam that can be moved from the wall to pinpoint any spot on the patient's body in performing emergency surgical procedures.

Each patient can speak directly to the nurse at a central nursing station through an intercom in his room. In addition, each patient's condition parameters are channeled into the central station. Dynamic parameters — such as EKG, EEG, direct blood pressure levels, and pulse pressure waveforms — can be observed at a moment's notice on a two-channel oscilloscope. A digital display unit alongside the oscilloscope also monitors the blood pressure, temperature, respiration, and heartrate. The central nursing station will handle most of the administrative work of the ICU. It will also provide for teaching utilization, allowing medical students to observe each patient's condition without disturbing the patient.

Two nursing sub-stations will be the center for primary medical care in the unit. They will provide constant vigilance of two dynamic parameters for each patient in addition to the digital display of static measures. With sliding glass panels forming an entire wall of nearly every room in the unit, each patient is easily observed and quickly accessible to nurses at all times.

Present plans call for a minimum of one ICU physician on duty 24 hours a day with a nursing staff of six, specially trained in stroke and coronary care.

A new generator system hooked directly to the

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*Edwin W. Parkhurst Jr. is assistant director of University Hospital and an instructor in graduate studies, health services management.*

ICU will eventually provide emergency power to back-up every piece of electrical equipment.

Even the decor of the rooms will receive special attention after a study showed that pastel blue was the color most conducive to a patient's well-being. The unit will be color-keyed to match the findings of the study.

Providing twelve beds at an equipment and renovation cost of \$40,000 per bed, however, meant that extensive research was a "must." Visits to the Myocardial Infarction Research Unit at the University of Alabama Medical Center in Birmingham, visits to the Miami (Fla.) Heart Institute, to the Menorah Medical Center in Kansas City, to Cincinnati's Christ Hospital, and to the Hospitals and Clinics of the University of Iowa each provided an insight into the strong points and the pitfalls in ICU development.

Development at Missouri included an unusual mock-up phase. A proposed module of the ICU was constructed and used on an experimental basis with physicians, nurses, para-medical personnel, and patient actors playing the roles they would assume in case of an emergency situation. All of the play acting took place before television cameras which recorded the entire sequence from the initial alarm phase of the emergency to the exit of all personnel after the "patient" had been successfully treated. Looking at the video-tape helped to test the practicality of the unit proposals. Had enough space been allowed for? Was the built-in equipment panel in the right place? Were electrical outlets in the proper locations? Were the entrances and exits to the unit wide enough and did they provide a minimum of conflict between physician, nurse, inhalation therapist, and others needed at the time of the emergency?

With these studies and the extensive background development the Medical Center has now been able to stay within the limits of hospital construction costs. Today, on the average, provision of one "regular" hospital bed runs up to \$38,000. The Medical Center has added \$2000 to that cost and come up with not just a "regular" hospital bed, but a highly sophisticated, custom-built intensive care system that will be a showplace for treatment of the critically ill.

Phase I will be completed by summertime, Phase II still awaits federal, state, and private support. □